

Appl. Serial No. 10/628,163
Amendment Dated 3 November 2005
Reply to Office Action of 11 May 2005

63479.0118

Remarks/Arguments

This Amendment is in response to the Office Action mailed 11 May 2005. In this Office Action, the Examiner objected to Applicant's prior amendment to the specification under 35 USC 132(a) because it introduced new matter. The Examiner additionally rejected claims 1, 3, 5, 7, 9-18 under 35 USC 112, 1st paragraph as failing to comply with the written description requirement. Further, the Examiner rejected claims 9-14 under 35 USC 112, 2nd paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter that applicant regards as the invention. Additionally, the Examiner rejected claims 9-14 under 35 USC 101 as being directed to non-statutory subject matter. Further, the Examiner rejected claims 1-9 and 11-18 under 35 USC 103(a) as being unpatentable over Lambrecht et al. (US Pat. No. 5,935,232) in view of Elabd (US Pat. No. 6,526,462). Further, the Examiner rejected claim 10 under 35 USC 103(a) as being unpatentable over Lambrecht et al. (US Pat. No. 5,935,232) in view of Elabd (US Pat. No. 6,526,462) and further in view of Qureshi et al (US Pat. No. 6,353,867).

1. Claim Summary

The Applicant has canceled claims 1 through 14 and 16. The Applicant has amended claims 15, 17, and 18 to clarify the claimed invention. And, the Applicant added new dependant claims 19 through 30.

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2. Objections to Applicant's prior amendment under 35 USC 132(a)

The Examiner objected to Applicant's prior amendment to the specification under 35 USC 132(a) because it introduced new matter. The Applicant's prior amendment to the specification and abstract was to correct a number of errors in the specification. Thus, the amendments were conforming those parts of the specification and abstract that were in error to the rest of the specification and drawings that are correct. The support for the prior amendments can be found in paragraphs 48, 50, 51, and 52 of the specification and in Fig. 1. Further support can also be found in Figs. 2 and 16-28 and their associated text. Referring specifically to Fig. 1, the m-bus 130 (the first internal unidirectional bus of the claim) couples to cache 126 and channel controller 128. Further, m-bus 130 couples to Memory Access Controller (MAC) 140. Cache 126 and controller 128 couple to a CPU subsystem 110. Paragraphs 48, 50, 51, and 52 describe in detail how the m-bus 130 (the first internal unidirectional bus of the claim) controls the transactions between the processor subsystems such as CPU subsystem 110, DMA peripherals such as DMA block 134 and 138, and using MAC 140. As can be seen from the specification as originally filed, the Applicant did not add new matter to the specification or claims in the prior amendment. The Applicant therefore respectfully requests that the Examiner withdraw the objection to Applicant's prior amendment to the specification under 35 USC 132(a) and enter the amendments.

3. Claim Rejections under 35 USC 112, 1st paragraph

The Examiner rejected claims 1, 3, 5, 7, 9-18 under 35 USC 112, 1st paragraph as failing to comply with the written description requirement. The Examiner stated that

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the specification as originally filed did not show the communication between the processor subsystems and the DMA peripherals using the memory access controller. As described above, Fig.1 and paragraphs 48, 50, 51, and 52 specifically describe the claimed communication. Further description is found in Figs. 2 and 16-28 and their associated text. Thus, there is sufficient support in the original specification for the currently amended claims. The Applicant therefore requests that the Examiner withdraw the rejection to claims 1, 3, 5, 7, 9-18 under 35 USC 112, 1st paragraph as failing to comply with the written description requirement.

4. Claim Rejections under 35 USC 112, 2nd paragraph and 35 USC 101

The Examiner rejected claims 9-14 under 35 USC 112, 2nd Paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter that applicant regards as the invention. Additionally, the Examiner rejected claims 9-14 under 35 USC 101 as being directed to non-statutory subject matter. The Applicant again disagrees with the Examiner on whether these claims satisfies both 35 USC 112, 2nd paragraph and 35 USC 101. However, as it is cheaper for the Applicant to add (amend) the claims rather than appeal the Examiner's determination, the Applicant is adding new claims 19 - 30 that are dependent claims in a more familiar form to the Examiner. Applicant therefore respectfully requests that the Examiner withdraw the rejections to claims 9-14 under 35 USC 112, 2nd Paragraph and 35 USC 101.

5. Claim Rejections under 35 USC 103(a)

The Examiner rejected claims 1-9 and 11-18 under 35 USC 103(a) as being unpatentable over Lambrecht et al. (US Pat. No. 5,935,232) in view of Elabd (US Pat.

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No. 6,526,462). Further, the Examiner rejected claim 10 under 35 USC 103(a) as being unpatentable over Lambrecht et al. (US Pat. No. 5,935,232) in view of Elabd (US Pat. No. 6,526,462) and further in view of Qureshi et al (US Pat. No. 6,353,867).

In response to the Office Action, Applicant is amending the claims to further clarify the claimed invention. Applicant believes that a new search is unnecessary as these amendments narrow the scope of the claimed invention. Further, Applicant believes that these amendments places the pending claims in immediate condition for allowance or appeal.

To summarize, the claimed invention is a system on chip (SoC) that has 2 internal point to point unidirectional buses where each bus serves a specific function by their control and operation of the various components attached to the bus. The first internal point to point unidirectional bus uses one or more channel controllers or caches to couple to one or more processor subsystems and one or more DMA-type peripheral(s). A Memory Access Controller uses the first internal bus to control transactions on the bus between the previously listed components. The first internal unidirectional bus allows for high speed accesses to one or more shared memories between the processor subsystems and the DMA-type peripherals. This bus is optimally used for peripheral to memory and memory to peripheral communications and can facilitate peer to peer communications. The second internal unidirectional bus couples the processor subsystems through an interface controller to one or more non-DMA peripherals, the Memory Access Controller, and the other DMA type peripherals, and controls the transaction between these components using point to point unidirectional address and transaction control signals. The second internal unidirectional bus provides

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for low speed accesses to peripherals. This bus is the communication interface between the processor subsystems and the peripherals, and is not used to access memory.

The Examiner has failed to establish a *prima facie* case of obviousness for using the combination of Lambrecht and Elabd as 103(a) references for claims 1-9 and 11-18. Additionally, the Examiner has failed to establish a *prima facie* case of obviousness for using the combination of Lambrecht, Elabd, and Qureshi as 103(a) references for claim 10.

To establish a *prima facie* case of obviousness, an Examiner must met 3 basic criteria:

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.

MPEP 2143.

When an Examiner is applying 35 USC 103, the Examiner must consider and follow the following standards:

When applying 35 USC 103, the following tenets of patent law must be adhered to:

- (A) The claimed invention must be considered as a whole;
- (B) The references must be considered as a whole and must suggest the desirability and thus the obviousness of making the combination;
- (C) The references must be viewed without the benefit of impermissible hindsight vision afforded by the claimed invention and
- (D) Reasonable expectation of success is the standard with which obviousness is determined.

MPEP 2141

The Applicant agrees that Lambrecht and Elabd are both related to the general field of SoC devices. As such, there is some similarity between the disclosure of this invention and the disclosures of Lambrecht and Elabd. The Applicant, however,

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disagrees with the Examiner over the combination of these references under 35 USC 103(a). In this Office Action and in the prior Office Action, the Examiner stated that Lambrecht did not teach or suggest all of the claim limitations of the claimed invention. Additionally, the Examiner in this Office Action and in the prior Office Action noted that Elabd did not teach or suggest all of the claim limitations of the claimed invention. Before arriving at the rejection, the Examiner took Official Notice of clocking signals, and then made an obviousness conclusion regarding clocking to further support the use of Lambrecht. The Applicant objects to the Official Notice and its associated obviousness conclusion because the Examiner is manufacturing support for the use of Lambrecht. The Examiner then arbitrarily combined the references for the 103(a) rejection. To support his argument for combining the references, the Examiner cited *In re Nomiya*, *In re McLaughlin*, and *In re Bozek*.

The Examiner's combination of Lambrecht and Elabd is in contradiction to MPEP 2141 and MPEP 2143 because the cited references do not suggest or imply that they need to be modified or combined. See *also* MPEP 2143.01(I). Further, MPEP 2143 requires that the combination must teach or suggest all of the limitations of the claimed invention, which this combination does not. Further, MPEP 2141 counsels against impermissible hindsight, which the Examiner is doing in the arbitrary combination of the references. Finally, the mere fact that references can be combined is not sufficient to establish *prima facie* obviousness. MPEP 2143.01(III).

To again summarize Lambrecht, this reference describes a system for choosing communication pathways for data transfers on a computer chip based on desired latency and bandwidth characteristics. Lambrecht does not provide any limitations on

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components attached to either of its buses. Nor does Lambrecht limit the communication on its buses, for example, the buses in Lambrecht can support unidirectional communications or bi-directional communications. The present invention, however, does limit the type of peripherals to each bus. Additionally, the present invention also limits the communication on the bus to point to point unidirectional signals. Lambrecht does not expressly state that there is a need for these limitations, nor does it imply a need for these limitations. Therefore, this reference does not provide, suggest, or imply a motivation to combine it with Elabd.

To again summarize Elabd, this reference is a programmable multi-tasking memory management system that manages memory requests associated with a SoC device. This device contains a bus that is similar in structure to Applicant's second internal bus. Elabd does not, however, contain a structure similar to Applicant's first internal bus. Elabd contains multiple dedicated buses between each of processor structures or communication devices. The Applicant, on the other hand, uses a single shared bus for this type of communication. Elabd does not expressly state that there is a need for these limitations, nor does it imply a need for these limitations. Therefore, this reference does not provide, suggest, or imply a motivation to combine it with Lambrecht.

To again summarize Qureshi, this reference describes a system of virtual components for a SoC design. Qureshi does not include all of the limitations of the claimed invention. Further, Qureshi does not expressly state that there is a need for these limitations, nor does it imply a need for these limitations. Therefore, this reference

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does not provide, suggest, or imply a motivation to combine it with Lambrecht and Elabd.

In summary, the Examiner failed to establish a *prima facie* case of obviousness with the combination of Lambrecht and Elabd as 103(a) references for claims 1-9 and 11-18 and with the combination of Lambrecht, Elabd, and Qureshi as 103(a) references for claim 10. The combination of Lambrecht and Elabd and the combination of Lambrecht, Elabd, and Qureshi both fail to teach or suggest all of the claim limitations of the claimed invention. Additionally, both combinations fail to provide a suggestion or motivation to one skilled in the art of designing systems on chips to modify any of the cited references for use with the claimed invention. Therefore, Applicant respectfully requests that the Examiner withdraw the rejections to claims 1-9 and 11-18 under 35 USC 103(a) as being unpatentable over Lambrecht et al. (US Pat. No. 5,935,232) in view of Elabd (US Pat. No. 6,526,462). Additionally, the Applicant respectfully requests that the Examiner withdraw the rejection to claim 10 under 35 USC 103(a) as being unpatentable over Lambrecht et al. (US Pat. No. 5,935,232) in view of Elabd (US Pat. No. 6,526,462) and further in view of Qureshi et al (US Pat. No. 6,353,867).

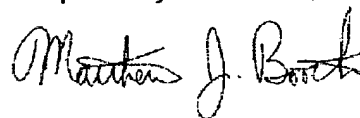
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6. Summary

In view of the above, Applicant believes that each of the presently pending claims is in immediate condition for allowance or appeal. Accordingly, Applicant respectfully requests that the Examiner withdraw the outstanding objections and rejections of the claims and issue a timely Notice of Allowance in this case.

Respectfully submitted,



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